

Japanese Knotweed



Polygonum cuspidatum Sieb. & Zucc.

Alternate Names

Japanese bamboo, fleecflower,
Mexican bamboo

Synonyms

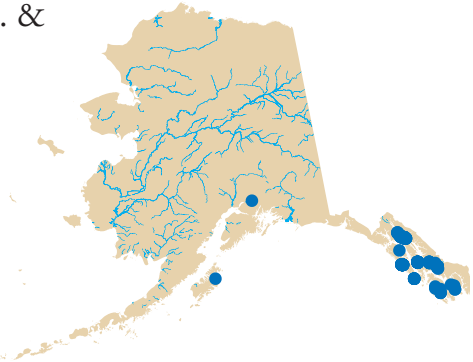
Fallopia japonica (Houtt)
Dcne, *Plueropterus*
cuspidatum (Sieb.
& Zucc.) Moldenke, *Plueropterus*
zuccarinii (Small) Small, *Polygonum*
zuccarinii Small, *Reynourtia japonica*
Houtt

Related Species

Giant knotweed
Polygonum sachalinense F. Schmidt ex
Maxim
Bohemian knotweed
Polygonum x bohemicum (J. Chrtek
& A. Chrtkova) P.F. Zika & A.L.
Jacobson

Description

Japanese knotweed stems grow up to 10 feet tall and are hollow and bamboo-like, with thickened nodes where the leaf stalks meet the stem. Nodes are surrounded by thin papery sheaths, and stems are angled slightly at each node. Leaves are broadly oval, satiny-textured, and up to 6 inches long with short stalks. Inflorescences are branched sprays of small white to greenish-white flowers in late summer. Giant knotweed has very large leaves, up to 18 inches long. To differentiate the species, look at leaves from the middle of a shoot, not



Japanese knotweed.

USDA Forest Service photo by Brad Kriekhaus

the shoot tip leaves, which are highly variable. Leaves of Japanese knotweed are flat-based, with an acutely tapering tip, whereas leaves of giant knotweed have a deeply notched base with a more gradually tapering tip, and leaves of bohemian knotweed are intermediate between the other two species. Hairs on the midvein on the underside of the leaf are also diagnostic with a 10X handlens. Hairs of giant knotweed are multicellular, kinky, and long, whereas hairs of bohemian knotweed are shorter and unicellular with a broad base. Hairs of Japanese knotweed are reduced to bumps.



USDA Forest Service photo by Tom Heutte

Bohemian knotweed.

Similar Species

Black bindweed (*Polygonum convolvulus* L., included in this book), is a viny species occasionally found in Alaska with smaller leaves and of smaller stature than Japanese knotweed. Bukhara fleecflower (*P. baldschuanicum* Regel) is found in the Pacific Northwest and has pink-tinted flowers. Cultivated knotweed (*P. polystachyum* Wallich ex Meisn.), found in California and Oregon, is characterized by willow-shaped leaves and often forms dense colonies. All native species of *Polygonum* in Alaska are considerably smaller than Japanese knotweed and do not have broad leaves.

Ecological Impact

Japanese knotweed forms single-species stands that reduce biodiversity by outshading native vegetation. This species clogs waterways and lowers the quality of habitat for wildlife and fish. It also reduces the food supply for juvenile salmon in the spring. Dead stems and leaf litter decompose very slowly and form deep organic layers that prevent native seeds from germinating, thereby altering the succession of native plant species. During dormant periods, dried stems and leaves can create a fire hazard.

Biology and Invasive Potential

Japanese knotweed reproduces primarily by vegetative regeneration of rhizomes and fresh stems. Very small fragments of rhizome, as little as $\frac{1}{40}$ of an ounce, can produce a new plant. In Alaska seed production is unknown, however thus far in Britain it varies from none when fertile male plants are rare to several hundred seeds nearer to sources of giant knotweed and Bukhara fleecflower (Beerling et al. 1994). No systematic study of seed longevity has been undertaken, but seeds stored at room temperature retained viability for four years. This species is capable of establishment in native habitats with little or no observable disturbance. Plant fragments washed downstream are capable of producing new colonies. Dispersal across marine waters has also been reported (Beerling et al. 1994). Fruits disperse primarily with wind.



Japanese knotweed.

XID Services photo by Richard Old

Japanese knotweed has been planted as an ornamental in southeast Alaska and in the Anchorage area and commonly escapes from gardens. Transportation of soil containing rhizome fragments on construction equipment is also possible. Germination rates are high either after five months of storage at room temperature or three months at 35° to

40°F. Japanese knotweed has been observed growing in a variety of soil types including silt, loam, and sand, with pH levels ranging from 4.5 to 7.4. It requires high light environments and can tolerate high temperatures, salinity, and drought (Seiger 1991). Japanese knotweed is listed as noxious in California, Oregon, and Washington.

Distribution and Abundance

Japanese knotweed was introduced to North America in the late 1800s. It is now widely found in at least 42 of the United States and most Canadian provinces. Infestations are common around most communities in southeast Alaska (AKEP-IC Database 2004). This species is often found near water sources, such as along streams and rivers, in disturbed areas, in utility rights-of-way, in neglected gardens, and around old homesites. It has also been observed growing in the understory of alder thickets in Alaska. In Europe, the northern limit of Japanese knotweed distribution corresponds with the boundary of 120 frost-free days (Beerling et al. 1994). It is native to Japan, North China, Taiwan, and Korea and is now a serious invasive species problem in mainland Europe, the United Kingdom, North America, and New Zealand.



XID Services photo by Richard Old

Japanese knotweed flowers.

Management

For Japanese knotweed, hand-pulling is extremely labor intensive and effective only for small initial populations. Application of herbicide is very effective but is hampered by the height of plants. To get around this problem, one can cut or bend plants over in mid-summer and then spray herbicide on the foliage of regrowing plants before they get too tall to spray. Herbicide application on cut stems is ineffective. Application to foliage with a wick applicator or paintbrush has more limited effectiveness but can minimize damage to desirable vegetation where the knotweed is interspersed with native species. Stem injection devices are

commercially available. When performing stem injection, it is necessary to mark which stems have been injected to track progress. Expect to see sparse growth of small, stunted plants one year after treatment. Several years of monitoring and follow-up treatments are recommended for any control method used on Japanese knotweed.

Notes

Knotweed is a rapid colonizer of bare soil and has been used to stabilize soil on steep slopes. It has been spread around many of our communities by dumping soil and possibly cut brush along roadsides. Single plants may cover several acres. One clump along the beachfront south of Juneau is over 400 feet long. This species was introduced to England in 1825 for use as an ornamental and was subsequently introduced to the United States for use in ornamental hedges and for erosion control. In Japan, the plant is commonly called “itadori,” which means strong plant.



USDA Forest Service photo by Tom Heutte

Bohemian knotweed.